

REMARKS/ARGUMENTS

Claims 1, 2, 4, 6-14, 16-18, 20-22 are pending. Claims 1, 13, and 21 have been amended.

Claims 3, 5, 15, 17, 19 have been canceled.

1. Summary of the Office Action

Claims 1-2, 4, 6-11, 13-14, 16, 18, 20-22 stand rejected under § 103(a) as being anticipated by U.S. Patent No. 4,682,284 (hereinafter “Schrofer”) in view of U.S. Patent No. 5,954,815 (hereinafter “Joshi”), in further view of U.S. Patent No. 4,841,476 (hereinafter “Mitchell”).

Claim 12 stand rejected under § 103(a) as being anticipated by U.S. Patent No. 6,477,562 (hereinafter “Nemirovsky”).

2. Response to § 103 Rejections

Applicants respectfully traverse this rejection for the reasons set out below, and ask the Examiner for reconsideration.

To establish a **prima facie** case of **obviousness**, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

**THE PRIOR ART REFERENCES DO NOT TEACH OR SUGGEST ALL CLAIM
LIMITATIONS, WHEN CONSIDERED SINGULARLY OR IN COMBINATION**

Claim 1 reads as follows:

1. A method including:

in a queue, writing a first microinstruction of a plurality of microinstructions to a first location indicated by a write pointer, the plurality of microinstructions being written to the queue as a set of a predetermined number of microinstructions, and the first microinstruction of the plurality of microinstructions being indicated as invalid on account of being outside a macroinstruction;

making a qualitative determination whether or not to retain the first microinstruction within the queue based on the indicated invalidity of the first microinstruction;

if the qualitative determination is to retain the first microinstructions, then advancing the write pointer to indicate a second location within the queue into which to write a second microinstruction; and

if the qualitative determination is not to retain the first microinstruction, then maintaining the write pointer to indicate the first location within the queue into which to write the second microinstruction, so that the first microinstruction is overwritten by the second microinstruction.

The Office action states that Schrofer fails to disclose the first instruction of the plurality of instructions being indicated as invalid on account of being outside a trace of instructions. Similarly, Schrofer fails to disclose “the first instruction … being indicated as invalid on account of being a macroinstruction,” as recited in the amended claim 1.

Joshi discloses a branch instruction comprising two instructions. The first instruction, termed the initial branch instruction, computes the branch target and the branch condition. The second instruction, termed a delay instruction, immediately follows the initial branch instruction and is used to actually change the program flow to the branch target instruction. (Joshi, 6: 45-51.) In Joshi, if the branch is predicted, all instructions in the current line that occur after the delay instruction associated with the branch are invalidated. (Joshi, 7: 2-8.)

Since Joshi fails to disclose or suggest a microinstruction or a macroinstruction, the Office action cites Mitchell to disclose a microinstruction. However, there is no indication in Joshi, Mitchell or a combination thereof that a macroinstruction can not comprise one or more microinstructions preceding a delay microinstruction *as well as* one or more microinstructions following the same delay microinstruction. In other words, there is no indication in Joshi-Mitchell combination that a microinstruction that comes after a delay microinstruction is outside a macroinstruction. In contrast, claim 1 requires “**the first microinstruction** of the plurality of microinstructions being indicated as invalid on account of being outside a macroinstruction.”

Thus, the combination of Schrofer, Joshi and Mitchell fails to disclose or suggest “the first microinstruction of the plurality of microinstructions being indicated as invalid on account of being outside a macroinstruction,” as recited in claim 1. Therefore, claim 1 and its dependent claims are patentable over the combination of Schrofer, Joshi and Mitchell.

It will be noted that the amendment to claim 1 is meant to merely clarify the condition for invalidating a microinstruction.

Claims 13 and 21 recite “the first microinstruction of the plurality of microinstructions being indicated as invalid on account of being outside a macroinstruction.” Thus, claims 13 and 21, as well as their respective dependent claims, are patentable over Schrofer, whether considered separately or in combination with Joshi and Mitchell for at least the reasons articulated with respect to claim 1.

Claim 12 stand rejected under § 103(a) as being anticipated by Nemirovsky. Nemirovsky is directed at a multi-streaming processor having resources adapted to execute multiple instruction streams in parallel from multiple available program threads. Nemirovsky fails to disclose or suggest “the first microinstruction of the plurality of microinstructions being indicated as invalid on account of being outside a macroinstruction” required by claim 1 by virtue of being dependent on claim 1. Thus, claim 12 is patentable over Schrofer, whether considered separately or in combination with Joshi, Mitchell, and Nemirivsky, for at least the reasons articulated with respect to claim 1.

In light of the above, Applicants respectfully submit that the rejections under 35 U.S.C. § 103 have been overcome, and withdrawal of these rejections is therefore respectfully requested.

3. Conclusion

Having tendered the above remarks, Applicants respectfully submit that all rejections have been addressed and that the claims are now in a condition for allowance, which is earnestly solicited.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of the present application, the Examiner is invited to contact Elena B. Dreszer at (408) 947-8200 ext. 209.

Respectfully submitted,

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